a.) Amendment to the Claims:

Claim 1 (Cancelled).

2. (Currently Amended) A polypeptide selected from the group consisting of the following (a) and b):

(a) a polypeptide comprising the amino acid sequence SEQ ID NO:1 or 2, and

(b) a polypeptide comprising amino acid residues 56 to 359 of SEQ ID NO:1 or 2,

wherein said polypeptide has an activity to transfer fucose to an N-acetylglucosamine residue in an N-acetyllactosamine (Gal β 1-4GlcNAc) structure existing in a nonreducing terminus of a sugar chain via an α 1,3-linkage, but not an activity to transfer fucose to an α 2,3-sialyl N-acetyllactosamine (NeuAc α 2-3Gal β 1-4GlcNAc) structure existing in a nonreducing terminus of a sugar chain via an α 1,3-linkage.

Claim 3 (Cancelled).

4. (Currently Amended) A DNA selected from the following (a), (b), (c), (d), (e), (f), (g) and (h):

(a) a DNA encoding the polypeptide according to claim 2 or 51,

(b) a DNA having nucleotides 280 to 1194 of ~~the nucleotide sequence~~ SEQ ID NO: 3,

(c) a DNA having nucleotides 115 to 1194 of ~~the nucleotide sequence~~ SEQ ID NO: 3,

(d) a DNA having nucleotides 1454 to 2368 of ~~the nucleotide sequence~~ SEQ ID NO: 4,

(e) a DNA having nucleotides 1289 to 2368 of ~~the nucleotide sequence~~ SEQ ID NO: 4,

(f) a DNA having nucleotides 460 to 1374 of ~~the nucleotide sequence~~ SEQ ID NO: 5,

(g) a DNA having nucleotides 295 to 1374 of ~~the nucleotide sequence~~ SEQ ID NO: 5,

(h) a full length complement of a DNA hybridizing with DNA selected from (a), (b), (c), (d), (e), (f) and (g) using a filter with colony- or plaque-derived DNA immobilized thereon at 65°C in the presence of 0.7-1.0M of NaCl, followed by washing the filter at 65°C with 0.1 standard concentration of SSC (saline-sodium citrate) solution (one standard concentration of SSC solution consists of 150mM sodium chloride and 15mM sodium citrate), wherein all of said DNA encode a polypeptide having an activity to transfer fucose to an N-acetylglucosamine residue in an N-acetyllactosamine (Gal β 1-4GlcNAc) structure existing in a nonreducing terminus of a sugar chain via an α

1,3-linkage, but not having an activity to transfer fucose to an α 2,3-sialyl N-acetyllactosamine (NeuAc α 2-3Gal β 1-4GlcNAc) structure existing in a nonreducing terminus of a sugar chain via an α 1,3-linkage.

5. (Original) A recombinant DNA obtained by integrating the DNA according to claim 4 into a vector.

6. (Previously Presented) The recombinant DNA according to claim 5 wherein the recombinant DNA is plasmid pBS-hFT9 (S2).

Claim 7 (Cancelled).

8. (Currently Amended) ~~The transformant~~ A transformant having the recombinant DNA according to ~~claim 7 or 52~~ claim 5 or 6, wherein the transformant is selected from the group consisting of microorganisms, animal cells, ~~plant cells,~~ and insect cells~~, non-human transgenic animals, and transgenic plants~~.

9. (Currently Amended) The transformant according to claim 8 , wherein the transformant is a microorganism ~~belongs~~ belonging to *Escherichia*.

10. (Currently Amended) The transformant according to claim 8, wherein the transformant is an ~~the~~ animal cell ~~is~~ selected from the group consisting of mouse myeloma cells, rat myeloma cells, mouse hybridoma cells, CHO cell, BHK cell, African green monkey kidney cells, Namalwa cell, Namalwa KJM-1 cell, human fetal kidney cells, and human leukemia cells.

11. (Currently Amended) The transformant according to claim 8, wherein the transformant is an insect cell ~~is~~ selected from the group consisting of *Spodoptera frugiperda* ovarian cells, *Trichoplusia ni* ovarian cells, and silkworm ovarian cells.

12. (Currently Amended) A method for producing a polypeptide ~~according to claims 2 or 51~~ selected from the group consisting of (a) a polypeptide comprising the amino acid sequence SEQ ID NO:1 or 2, and (b) a polypeptide comprising amino acid residues 56 to 359 of SEQ ID NO:1 or 2, wherein said polypeptide has an activity to transfer fucose to an N-acetylglucosamine residue in an N-acetyllactosamine (Gal β 1-4GlcNAc) structure existing in a nonreducing terminus of a sugar chain via an α 1,3-linkage, but not an activity to transfer fucose to an α 2,3-sialyl N-acetyllactosamine (NeuAc α 2-3Gal β 1-4GlcNAc) structure existing in a nonreducing terminus of a sugar chain via an α 1,3-linkage, which comprises the steps of:

culturing in a medium a transformant according to claim 8 ~~having a recombinant DNA obtained by inserting a DNA encoding the polypeptide into a vector~~;

producing and accumulating said polypeptide in said medium; and

isolating said polypeptide from the medium.

Claims 13-15 (Cancelled).

16. (Previously Presented) A method for producing a polypeptide according to claim 2 or 51, which comprises the steps of:

using a DNA encoding the polypeptide, and

synthesizing said polypeptide by an *in vitro* transcription-translation system.

17. (Previously Presented) A method for producing a reaction product wherein fucose is added to an N-acetylglucosamine residue in the N-acetyllactosamine structure of an acceptor substrate via an α 1,3-linkage, using a polypeptide selected from a polypeptide according to claim 2 or 51 as an enzyme source, which comprises the steps of:

placing in an aqueous medium (a) said enzyme source, (b) an acceptor substrate selected from (i) N-acetyllactosamine(Gal β 1-4GlcNAc), (ii) oligosaccharides having the N-acetyllactosamine structure in a nonreducing terminus thereof, (iii) complex carbohydrates having the N-acetyllactosamine structure in a nonreducing terminus of sugar chains, (iv) their derivatives wherein the N-acetyllactosamine structure is modified by sulfate group, and (v) their derivatives wherein the N-acetyllactosamine structure is modified by sugar, but a galactose residue in the N-

acetyllactosamine structure is not modified by sialic acid via an α 2,3-linkage, and (c) guanosine-5'-diphosphate fucose;

producing and accumulating the reaction product, in the aqueous medium; and

collecting said reaction product from said aqueous medium.

18. (Previously Presented) The method for producing the reaction product according to claim 17, wherein a derivative is selected from sugar chains having, in a nonreducing terminus thereof, any one of the following oligosaccharide structures: Fuc α 1-2Gal β 1-4GlcNAc, Gal α 1-3Gal β 1-4GlcNAc, Gal α 1-3(Fuc α 1-2)Gal β 1-4GlcNAc, GalNAc α 1-3(Fuc α 1-2)Gal β 1-4GlcNAc, Gal α 1-4Gal β 1-4GlcNAc, Gal β 1-4GlcNAc(6SO_3^-); and complex carbohydrates containing said sugar chains.

Claims 19-23 (Cancelled).

24. (Previously Presented) The production method according to claim 17, wherein the complex carbohydrate is selected from the group consisting of glycoproteins, glycolipids, proteoglycans, glycopeptides, lipopolysaccharides, peptideglycans and glycosides wherein a sugar chain binds to compounds such as steroids.

Claims 25-50 (Cancelled).

51. (Previously Presented) The polypeptide according to claim 2, wherein the activity of transferring fucose to an N-acetylglucosamine residue in the Gal β 1-4GlcNAc structure existing in a nonreducing terminus of a sugar chain via an α 1,3-linkage is the Lewis x sugar chain [Gal β 1-4(Fuc α 1-3)GlcNAc] and the Lewis y sugar chain [Fuc α 1-2Gal β 1-4(Fuc α 1-3)GlcNAc] synthesizing activity, and the activity of transferring fucose to an N-acetylglucosamine residue in the NeuAc α 2-3Gal β 1-4GlcNAc structure existing in a nonreducing terminus of a sugar chain via an α 1,3-linkage is the sialyl Lewis x sugar chain [NeuAc α 2-3Gal β 1-4(Fuc α 1-3)GlcNAc] synthesizing activity.

Claim 52 (Cancelled).

53. (Previously Presented) The production method according to claim 18, wherein the complex carbohydrate is selected from the group consisting of glycoproteins, glycolipids, proteoglycans, glycopeptides, lipopolysaccharides, peptideglycans and glycosides wherein a sugar chain binds to steroids.

Claims 54-75 (Cancelled).

76. (New) A method for producing a polypeptide selected from the group consisting of (a) a polypeptide comprising the amino acid SEQ ID NO:1 or 2, and (b) a

polypeptide comprising amino acid residues 56 to 359 of SEQ ID NO:1 or 2, wherein said polypeptide has Lewis x sugar chain [Gal β1-4(Fuc α 1-3)GlcNAc] and Lewis y sugar chain [Fuc α 1-2Gal β1-4(Fuc α 1-3)GlcNAc] synthesizing activities, but not sialyl Lewis x sugar chain [NeuAc α 2-3 Gal β1-4(Fuc α 1-3)GlcNAc] synthesizing activity, which comprises the steps of:

culturing in a medium a transformant according to claim 8;

producing and accumulating said polypeptide in said medium; and

isolating said polypeptide from the medium.